

Work Order # _____ Job # _____ Activity # _____ **STANDING WORK PERMIT** ☐

1. Work requester fills out this section

Requester: C. Biggs Date: 2/25/04 Ext. 7515 Dept/Div/Group: Physics / Phoenix
Other Contact person (if different from requester): Rob Pisanu Ext. 5301
Work Control Coordinator C. Biggs Start Date 2/26/04 Est. End Date 3/2/04
Description of Work / Problem: INTRODUCE a reference mix to existing system
Building 1009F Room 6A5 Equipment TEC BACK Service Provider L. HAWKINS, C. Biggs

2. Work requester, service provider, and ES&H (as necessary) fill out this section or attach analysis

ES&H Analysis

RADIATION CONCERNS ☒ NONE ☐ Activation ☐ Airborne ☐ Contamination ☐ Radiation ☐ OTHER _____
☐ Special nuclear materials involved, notify Isotope Special Materials Group ☐ Fissionable materials involved, notify Laboratory Criticality Officer

SAFETY CONCERNS ☐ NONE

<input type="checkbox"/> Adding / Removing Walls or Roofs	<input type="checkbox"/> Confined Space*	<input type="checkbox"/> Explosives	<input type="checkbox"/> Lead*	<input type="checkbox"/> Penetrating Fire Wall
<input type="checkbox"/> Asbestos*	<input type="checkbox"/> Corrosive	<input type="checkbox"/> Flammable	<input type="checkbox"/> Magnetic Field	<input checked="" type="checkbox"/> Pressurized Systems
<input type="checkbox"/> Beryllium*	<input type="checkbox"/> Cryogenic	<input type="checkbox"/> Fumes/Mist/Dust*	<input type="checkbox"/> Material Handling	<input type="checkbox"/> Rigging/Critical Lift
<input type="checkbox"/> Biohazard*	<input type="checkbox"/> Electrical	<input type="checkbox"/> Heat/Cold Stress*	<input type="checkbox"/> Noise*	<input type="checkbox"/> Toxic Materials*
<input type="checkbox"/> Chemicals*	<input type="checkbox"/> Elevated Work*	<input type="checkbox"/> Hydraulic	<input type="checkbox"/> Non-ionizing Radiation	<input type="checkbox"/> Vacuum
	<input type="checkbox"/> Excavation	<input type="checkbox"/> Lasers*	<input type="checkbox"/> Oxygen Deficiency*	<input type="checkbox"/> OTHER _____

*Does this work require medical clearance or surveillance from the Occupational Medicine Clinic? ☐ Yes ☒ No

ENVIRONMENTAL CONCERNS ☒ NONE

<input type="checkbox"/> Atmospheric Discharges (rad/non-rad)	<input type="checkbox"/> Liquid Discharges	<input type="checkbox"/> Work impacts Environmental Permit No. _____
<input type="checkbox"/> Chemical or Rad Material Storage or Use	<input type="checkbox"/> Oil / PCB Management	<input type="checkbox"/> Soil activation/contamination
<input type="checkbox"/> Cesspools (UIC)	<input type="checkbox"/> Protected areas / species	<input type="checkbox"/> Waste - Clean
<input type="checkbox"/> High water / power consumption	<input type="checkbox"/> Spill potential	<input type="checkbox"/> Waste - Hazardous
		<input type="checkbox"/> Waste - Industrial
		<input type="checkbox"/> Waste - Mixed
		<input type="checkbox"/> Waste - Radioactive
		<input type="checkbox"/> Waste - Regulated Medical
		<input type="checkbox"/> OTHER _____

Waste disposition by: _____

POLLUTION PREVENTION (P2) / WASTE MINIMIZATION OPPORTUNITY: ☐ None ☐ Yes

Facility Concerns ☒ NONE

<input type="checkbox"/> Access/Egress Limitations	<input type="checkbox"/> Impacts Facility Use Agreement	<input type="checkbox"/> Temperature Change	<input type="checkbox"/> OTHER _____
<input type="checkbox"/> Configuration Control	<input type="checkbox"/> Maintenance Work on Ventilation Systems	<input type="checkbox"/> Utility Interruptions	
<input type="checkbox"/> Electrical Noise	<input type="checkbox"/> Potential to Cause a False Alarm	<input type="checkbox"/> Vibrations	

Work Controls

WORK PRACTICES	<input type="checkbox"/> NONE	<input type="checkbox"/> Exhaust Ventilation	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Spill Containment
	<input type="checkbox"/> Back-up Person/Watch	<input type="checkbox"/> HP Coverage	<input type="checkbox"/> Posting/Warning Signs	<input type="checkbox"/> Time Limitation
	<input type="checkbox"/> Barricades	<input type="checkbox"/> IH Survey	<input type="checkbox"/> Scaffolding - requires inspection	<input type="checkbox"/> Warning alarm (i.e. "high level")

PROTECTIVE EQUIPMENT

<input type="checkbox"/> NONE	<input type="checkbox"/> Ear Plugs	<input type="checkbox"/> Gloves	<input type="checkbox"/> Lab Coat	<input checked="" type="checkbox"/> Safety Glasses
<input type="checkbox"/> Coveralls	<input type="checkbox"/> Ear Muffs	<input type="checkbox"/> Goggles	<input type="checkbox"/> Respirator	<input type="checkbox"/> Safety Harness
<input type="checkbox"/> Disposable Clothing	<input type="checkbox"/> Face Shield	<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Shoe covers	<input checked="" type="checkbox"/> Safety Shoes <input type="checkbox"/> OTHER _____

PERMITS REQUIRED
(Please attach)

Initial next to box to show who has responsibility to generate the permit. Permits must be valid when job is scheduled.

<input checked="" type="checkbox"/> NONE	<input type="checkbox"/> Cutting/Welding	<input type="checkbox"/> Impair Fire Protection Systems
<input type="checkbox"/> Concrete/Masonry Penetration	<input type="checkbox"/> Digging/Core Drilling	<input type="checkbox"/> Rad Work Permit - RWP No. _____
<input type="checkbox"/> Confined Space Entry	<input type="checkbox"/> Electrical Working Hot	<input type="checkbox"/> OTHER _____

DOSIMETRY/ MONITORING

<input checked="" type="checkbox"/> NONE	<input type="checkbox"/> Heat Stress Monitor	<input type="checkbox"/> Real Time Monitor	<input type="checkbox"/> TLD
<input type="checkbox"/> Air Effluent	<input type="checkbox"/> Noise Survey/Dosimeter	<input type="checkbox"/> Self-reading Pencil Dosimeter	<input type="checkbox"/> Waste Characterization
<input type="checkbox"/> Ground Water	<input type="checkbox"/> O ₂ /Combustible Gas	<input type="checkbox"/> Self-reading Digital Dosimeter	<input type="checkbox"/> OTHER _____
<input type="checkbox"/> Liquid Effluent	<input type="checkbox"/> Passive Vapor Monitor	<input type="checkbox"/> Sorbent Tube/Filter Pump	

Training Requirements (List below any location specific training requirements)

Based on analysis above, the Walkdown Team determines the risk, complexity, and coordination ratings below.

ES&H Risk Level: ☒ LOW ☐ MODERATE ☐ HIGH
Complexity Level: ☒ LOW ☐ MODERATE ☐ HIGH
Work Coordination: ☒ LOW ☐ MODERATE ☐ HIGH

Note: If all the ratings are LOW, the Work Control Coordinator and Service Provider must sign for concurrence on the back side. Further review of the work permit is not required. If any ratings are MODERATE or HIGH, the entire permit must be completed.

3. Both work requester and service provider coordinate on work plan (use attachments for detailed plans)

Work Plan: (procedures, timing, equipment, and personnel availability need to be addressed)

Work Plan For Introducing Compensating Reference Mix Into TEC Gas Rack

1. Inform C-A Control Room and Phenix Control Room that we are working in 1008F on gas system.
2. Turn off TEC alarms. Make sure High voltage to TEC chambers is off.
3. Turn off Methane supply to rack at the wall.
4. "Bleed" the pressure off the tee to be plugged through FI-4.
5. Plug tee going into FI-4 input side and run new line to FI-4 from PCV-3.
6. Mount cylinder with Xenon reference mix in it in rack next to RICH Rack.
7. Mount a 2-Stage regulator on same and run a 1/4" copper line from it to the input for the PCV-3 on the TEC Rack.
8. Start up system again using normal procedure and leak check all fittings that were touched.
9. When system is in balance, re-enable alarms and inform Phenix and C-A Control Rooms that work is done.

Special Working

Operational Limits Imposed:

Post Work Testing Required: LEAK check all AFFECTED AREAS

Job Safety Analysis Required Yes ☒ No Walkdown Required Yes ☐ No ☒

Reviewed By: Primary Reviewer will determine the size of the review team and the other signatures required based on hazards and job complexity. Primary Reviewer signature means that the hazards and risks that could impact ES&H have been identified and will be controlled according to BNL requirements.

Title	Name (print)	Signature	Life #	Date
Primary Reviewer				
ES&H Professional				
Other				
Other				
Work Control Coordinator*	<u>CARTER BIGGS</u>	<u>[Signature]</u>	<u>15639</u>	<u>2/25/04</u>
Service Provider*	<u>LEIGH HAWKINS</u>	<u>[Signature]</u>	<u>10222</u>	<u>2/26/04</u>

*Only signatures required for concurrence on LOW rated jobs.

Review done: in series team

4. Job site personnel fills out this section

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements (including attached permits).

Job Site Supervisor	<u>CARTER BIGGS</u>	Contractor Supervisor	
Workers:	<u>LEIGH HAWKINS</u>	Workers:	
	Life # <u>10222</u>		Life #

Workers are encouraged to provide feedback on ES&H concerns or on ideas for improved job work flow. Use feedback form or space below.

5. Work Requester or designee fills out this section

Conditions are Appropriate to Start Work: (Work permit has been reviewed, work controls are in place, and site is ready for job.)

Name CARTER BIGGS Signature [Signature] Life # 15639 Date

6. Work Requester determines if Post Job Review is required No ☐ Yes (Fill in names of reviewers)

Post Job Review:

Name:	Signature	Life #:	Date:
Name:	Signature	Life #:	Date:

7. Worker provides feedback

Worker Feedback:

8. Work Control Coordinator (requesting dept.) checks quality of completed permit and closes out

Closeout: Name CARTER BIGGS Signature [Signature] Life #: 15639 Date: 2/27/04

Comments: